



## **Meteotsunamis in the instrumental records of the Iberian coast: Oceanic and atmospheric data analysis towards building a meteotsunami catalogue**

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Meteotsunamis are atmospherically induced high-energy ocean waves in the tsunami frequency band that destructively affect many coasts of the world oceans. However, meteotsunami forecast capabilities are still lacking in most operating tsunami warning systems. The Iberian coast is prone to the meteotsunami threat and the regional tsunami warning centre (IPMA, Portugal) faces the challenge of integrating the meteotsunami into the alert strategy. The first step of this approach is building a meteotsunami catalogue that incorporates relevant information on the events' characteristics and their pre-cursor conditions. In this work, past meteotsunamis, including the June 2006, July 2010, June 2011, and July 2018 events, are examined with unprecedented details through analyses of all available oceanic and atmospheric data. To isolate the tsunami signal and evaluate its characteristics, we perform de-tiding and spectral analysis of recorded signals. We then retrieve and analyse the atmospheric data during the identified events in order to define the pre-cursor weather conditions leading to meteotsunami formation. The results of this study consist of a catalogue incorporating tsunamis of the atmospheric origin with information on the date of occurrence, the tsunami arrival time, the maximum wave height, the number of waves, the wave period, and variation in the atmospheric pressure. This work was supported by the FCT funded project FAST- Development of new forecast skills for meteotsunamis on the Iberian shelf (PTDC/CTA-MET/32004/2017).